Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1. (Cancelled)

2. (Currently Amended) The transmitting circuit apparatus according to claim ~~1~~13, wherein the amplitude modulation data has multiple digital values, and

wherein the sigma-delta modulator modulates the amplitude modulation data to amplitude data having binary digital values.

3. (Currently Amended) The transmitting circuit apparatus according to claim ~~1~~13, wherein the sigma-delta modulator is at least a second-order or higher-order sigma-delta modulator.

4. (Currently Amended) The transmitting circuit apparatus according to claim ~~1~~13, comprising a band pass filter which reduces an unnecessary signal out of a transmitted frequency band of an output signal of the amplitude modulator and outputs the output signal.

5. (Currently Amended) The transmitting circuit apparatus according to claim ~~1~~13, wherein the amplitude modulator has a power amplifier and performs amplitude modulation by controlling a power supply of the power amplifier on the basis of an output signal of the sigma-delta modulator.

6. (Cancelled)

7. (Cancelled)

8. (Cancelled)

9. (Currently Amended) The transmitting circuit apparatus according to claim ~~1~~13, comprising:

a first E/O converter that converts the frequency-modulated carrier wave from an electric signal into an optical signal;

a first O/E converter that is connected to the first E/O converter via an optical fiber and converts an optical signal, which is converted by the first E/O converter, into an electric signal;

a second E/O converter that converts an output signal of the sigma-delta modulator into an optical signal whose wavelength is different from that of an output of the first E/O converter;

a second O/E converter that is connected to the second E/O converter via the optical fiber and converts an optical signal, which is converted by the second E/O converter, into an electric signal,

wherein an output signal of the second E/O converter is synthesized with an output signal of the first E/O converter, and is branched after being transmitted via the optical fiber to be converted into an electric signal from the optical signal by the second O/E converter, and

wherein the amplitude modulator performs amplitude modulation of an output signal of the first O/E converter with an output signal of the second O/E converter.

10. (Currently Amended) The transmitting circuit apparatus according to claim ~~1~~13, comprising:

an E/O converter which converts a signal, which is obtained by synthesizing a carrier wave, which is given the frequency modulation by the frequency modulator, and amplitude data which has digital values which are outputted from the sigma-delta modulator, from an electric signal into an optical signal; and

an O/E converter which is connected to the E/O converter via an optical fiber and converts a converted signal from an optical signal into an electric signal, wherein a signal converted by the O/E converter is divided into the frequency-modulated carrier wave and the amplitude data by a filter, and

wherein the amplitude modulator performs amplitude modulation of the frequency-modulated carrier wave, which is separated, with the amplitude data that is separated.

11. (Currently Amended) The transmitting circuit apparatus according to claim ~~1~~13, wherein the sigma-delta modulator has:

an n-th integrator generating a signal obtained by performing n-th integration of the amplitude modulation data,

a quantizer which quantizes the n-th-integrated signal into a digital value, and

a feedback circuit which feeds back the quantized value to an input value of the sigma-delta modulator,

wherein the quantized digital value becomes an output of the sigma-delta modulator, and

wherein the fed-back value is added to an input value of the sigma-delta modulator and is inputted into the n-th integrator.

12. (Currently Amended) The transmitting circuit apparatus according to claim ~~1~~13, wherein the sigma-delta modulator has a plurality of low-order sigma-delta modulators that is connected in multiple stages, and

wherein outputs of the plurality of low-order sigma-delta modulators are connected to a differentiator including configuration expressed by $(1-z^{-1})^m$ in z-transform for a order m until the preceding stage respectively, and are synthesized.

13. (New) A transmitting circuit apparatus comprising:

a frequency modulator that performs frequency modulation of a carrier wave with frequency modulation data and outputs the frequency-modulated carrier wave;

a sigma-delta modulator which performs sigma delta modulation of amplitude modulation data; and

an amplitude modulator that performs amplitude modulation of the frequency-modulated carrier wave with an output signal of the sigma-delta modulator and outputs the amplitude-modulated carrier wave;

wherein the frequency modulator has a phase-locked oscillator, which includes at least a variable frequency divider, and a second sigma-delta modulator, wherein the second sigma-delta modulator outputs a value, which is obtained by performing second-order or higher-order sigma-delta modulation of data which is obtained by adding the frequency modulation data to carrier frequency data, as a division number of the variable frequency divider, and

wherein the frequency-modulated carrier wave is outputted from the phase-locked oscillator.

14. (New) A transmitting circuit apparatus comprising:

a frequency modulator that performs frequency modulation of a carrier wave with frequency modulation data and outputs the frequency-modulated carrier wave;

a sigma-delta modulator which performs sigma delta modulation of amplitude modulation data; and

an amplitude modulator that performs amplitude modulation of the frequency-modulated carrier wave with an output signal of the sigma-delta modulator and outputs the amplitude-modulated carrier wave;

wherein the frequency modulator has a phase comparator, a loop filter, a voltage-controlled oscillator, a mixer, and an IF modulator,

wherein the IF modulator outputs a modulated wave signal at an intermediate frequency that is given frequency modulation with the frequency modulation data,

wherein the mixer performs frequency conversion of an output signal of the voltage-controlled oscillator to an intermediate frequency with a channel selection signal,

wherein the phase comparator performs phase comparison of the frequency-converted signal to a modulated wave signal at the intermediate frequency,

wherein the loop filter reduces an unnecessary signal from the phase-compared signal, and

wherein the voltage-controlled oscillator outputs the frequency-modulated carrier wave by its oscillation frequency being controlled by the signal where the unnecessary signal is reduced.

15. (New) The transmitting circuit apparatus according to claim 14, wherein the amplitude modulation data has multiple digital values, and

wherein the sigma-delta modulator modulates the amplitude modulation data to amplitude data having binary digital values.

16. (New) The transmitting circuit apparatus according to claim 14, wherein the sigma-delta modulator is at least a second-order or higher-order sigma-delta modulator.

17. (New) The transmitting circuit apparatus according to claim 14, comprising a band pass filter which reduces an unnecessary signal out of a transmitted frequency band of an output signal of the amplitude modulator and outputs the output signal.

18. (New) The transmitting circuit apparatus according to claim 14, wherein the amplitude modulator has a power amplifier and performs amplitude modulation by controlling a power supply of the power amplifier on the basis of an output signal of the sigma-delta modulator.

19. (New) The transmitting circuit apparatus according to claim 14, comprising:

a first E/O converter that converts the frequency-modulated carrier wave from an electric signal into an optical signal;

a first O/E converter that is connected to the first E/O converter via an optical fiber and converts an optical signal, which is converted by the first E/O converter, into an electric signal;

a second E/O converter that converts an output signal of the sigma-delta modulator into an optical signal whose wavelength is different from that of an output of the first E/O converter;

a second O/E converter that is connected to the second E/O converter via the optical fiber and converts an optical signal, which is converted by the second E/O converter, into an electric signal,

wherein an output signal of the second E/O converter is synthesized with an output signal of the first E/O converter, and is branched after being transmitted via the optical fiber to be converted into an electric signal from the optical signal by the second O/E converter, and

wherein the amplitude modulator performs amplitude modulation of an output signal of the first O/E converter with an output signal of the second O/E converter.

20. (New) The transmitting circuit apparatus according to claim 14, comprising:

an E/O converter which converts a signal, which is obtained by synthesizing a carrier wave, which is given the frequency modulation by the frequency modulator, and amplitude data which has digital values which are outputted from the sigma-delta modulator, from an electric signal into an optical signal; and

an O/E converter which is connected to the E/O converter via an optical fiber and converts a converted signal from an optical signal into an electric signal, wherein a signal

converted by the O/E converter is divided into the frequency-modulated carrier wave and the amplitude data by a filter, and

wherein the amplitude modulator performs amplitude modulation of the frequency-modulated carrier wave, which is separated, with the amplitude data that is separated.

21. (New) The transmitting circuit apparatus according to claim 14, wherein the sigma-delta modulator has:

an n-th integrator generating a signal obtained by performing n-th integration of the amplitude modulation data,

a quantizer which quantizes the n-th-integrated signal into a digital value, and

a feedback circuit which feeds back the quantized value to an input value of the sigma-delta modulator,

wherein the quantized digital value becomes an output of the sigma-delta modulator, and

wherein the fed-back value is added to an input value of the sigma-delta modulator and is inputted into the n-th integrator.

22. (New) The transmitting circuit apparatus according to claim 14, wherein the sigma-delta modulator has a plurality of low-order sigma-delta modulators that is connected in multiple stages, and

wherein outputs of the plurality of low-order sigma-delta modulators are connected to a differentiator including configuration expressed by $(1-z^{-1})^m$ in z-transform for a order m until the preceding stage respectively, and are synthesized.